

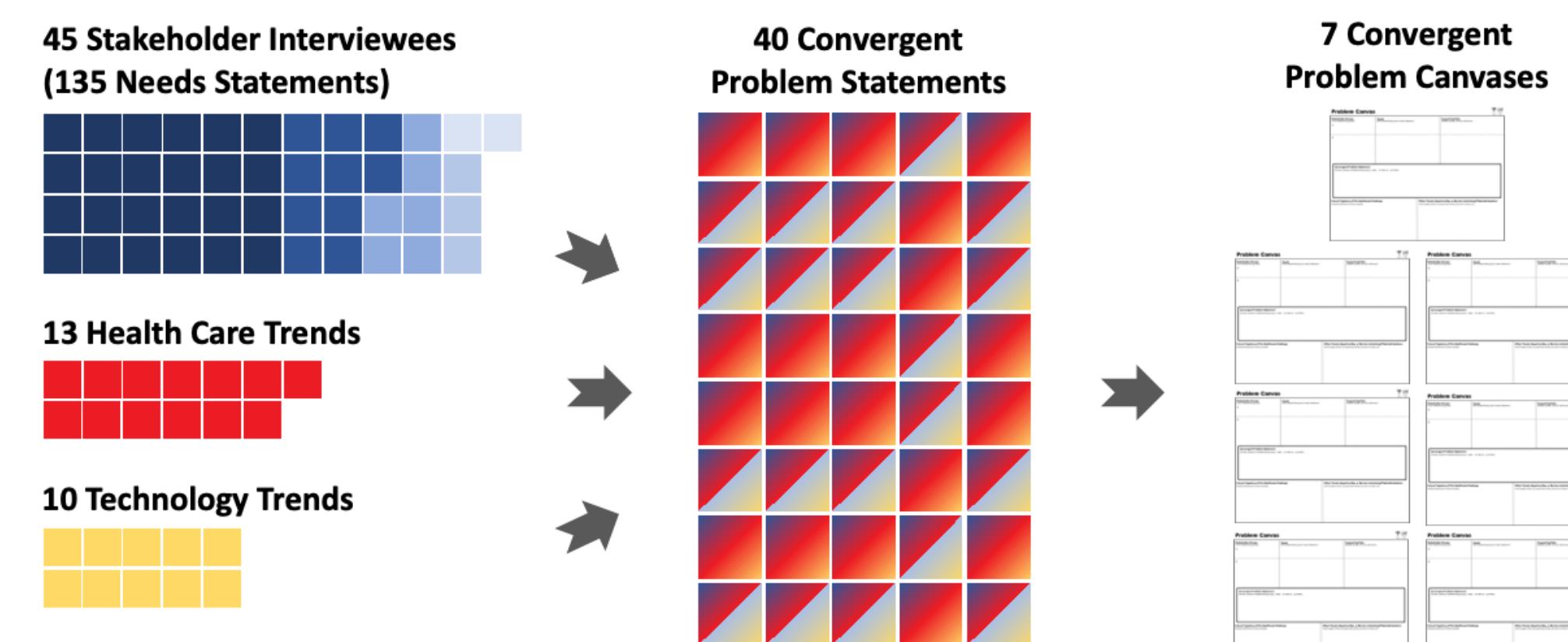
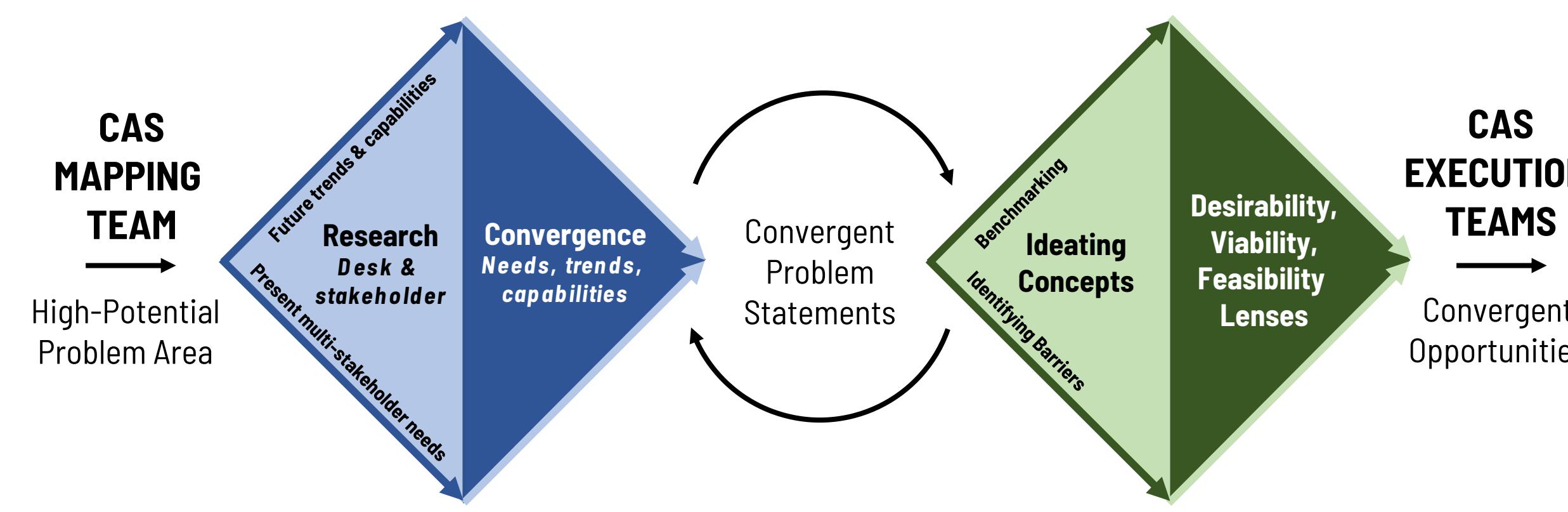


# CAS Synthesis: Helping aviation to address complex societal problems

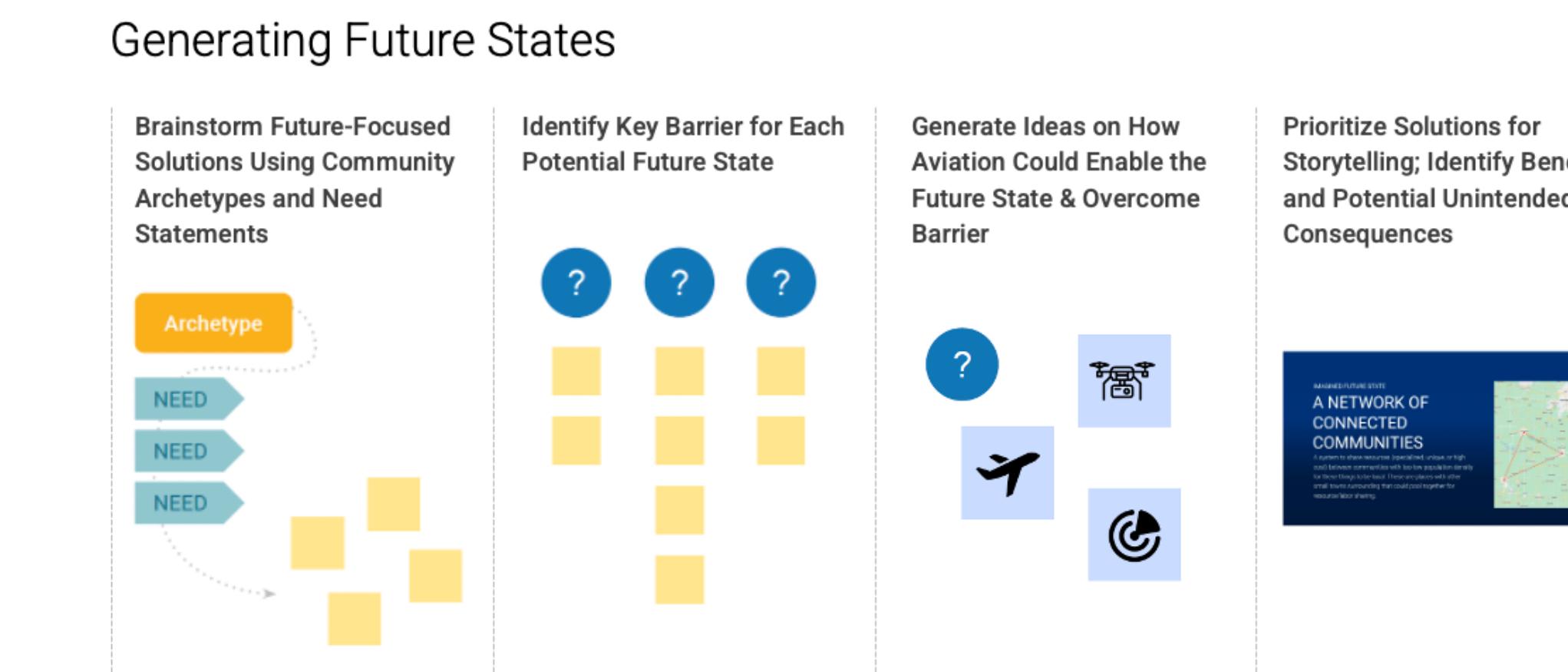
Conducting design research and stakeholder engagement to formulate convergent problems that can benefit from NASA capabilities

## Formulating Complex Sociotechnical Problems

We work across disciplines, centers, communities, and industries to explore complex sociotechnical challenges and co-develop desirable aviation futures that establish new high-impact opportunities for ARMD.



Example Process: Formulating convergent problems



Example Process: Ideating potential aviation futures



## How We Work

- Transdisciplinary teams:** we build diverse teams that go beyond the traditional roles, disciplines, and backgrounds within NASA
- Stakeholder engagement:** we engage many types of contributors and catalysts from everyday citizens who live the problems to experts in industry and academia
- Design research:** we use well-honed methods from the design theory & methodology field to formulate complex sociotechnical challenges and generate potential solutions
- Human-centered:** we keep societal context at the center of everything we do

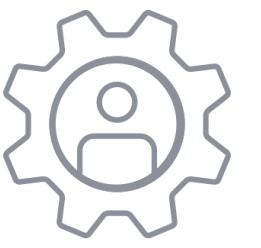
## What We Work On



**Compelling societal problems**  
e.g., revitalizing rural communities



**Future aviation challenges**  
e.g., weather tolerant ops for UAM



**Workforce development**  
spreading an innovation culture; recruiting next-gen innovators to NASA

## Capabilities and Services

We offer a suite of services that help teams to understand, scope, and begin to address complex sociotechnical problems:

- Engaging stakeholders** and generating design insights
- Formulating convergent problems** that incorporate stakeholder needs, trends, and emerging technology capabilities
- Ideating concepts**
- Soliciting feedback** and revising concepts or problem formulations
- Identifying barriers** related to stakeholder desirability, market viability, and technical feasibility
- Storytelling**, i.e., effectively advocating for a problem and/or proposed solution

## How to Engage With Us

**For NASA:** join a CAS team (for as little as a week), or partner with us to facilitate a design workshop for your project.

**For Industry/Academia:** join us in co-design, become a part of our network of SMEs to be called upon for consultation on needs or feedback on solutions.

**For Students:** intern with us!

## CONTACTS

Eric Brubaker (LaRC-D208): eric.r.brubaker@nasa.gov

Beth Rieken (LaRC-D208): elizabeth.f.rieken@nasa.gov